WHAT IS CLAIMED IS:

1. A method of decompressing a set of subsampled image data, wherein the subsampled image data is arranged in an A x B array of pixels, the method comprising:

reading a first subset of the subsampled image data into a cache memory and into a buffer, wherein the buffer has an amount of memory equal to or less than the cache memory;

calculating chrominance values for at least some pixels of the subset of the subsampled image data to form decompressed image data; and

outputting the decompressed image data.

2. The method of claim 1, wherein the buffer is configured to hold an A x C array of pixels of the decompressed image data, wherein C is less than B.

3. The method of claim 2, wherein the buffer is configured to hold an A x 3 array of pixels of the decompressed image data.

4. The method of claim 1, wherein the subsampled image data is 4:2:0 cosited image data.

5. The method of claim 4, wherein the buffer has a first line, a second line and a third line, and wherein the first line and the third line contain sampled chrominance values of the subsampled image data.

6. The method of claim 5, wherein calculating chrominance values includes calculating missing chrominance values for the first line from sampled chrominance values on the first line, calculating missing chrominance values for the third line from sampled chrominance values on the third line, and then calculating missing chrominance values on the second line from the sampled chrominance values on the first and third lines.

7. The method of claim 6 further comprising outputting the decompressed image data from the first and second lines to an output buffer after calculating the missing chrominance values for the first and second lines, and resetting the third line as the first line.

8. The method of claim 7, wherein resetting the third line as the first line includes resetting the first line as the second line and resetting the second line as the third line.

9. The method of claim 8, further comprising reading a new subset of subsampled image data into the second line and third line after resetting the first line as the second line and resetting the second line as the third line.

10. The method of claim 1, further comprising reading a second subset of the subsampled image data into the cache memory and into the buffer after outputting the decompressed image data.

11. The method of claim 10, further comprising iteratively reading subsets of the subsampled image data into the cache memory and into the buffer, calculating chrominance values for at least some pixels of each subset of the subsampled image data, and outputting the decompressed image data until the subsampled image data has been completely decompressed.

12. The method of claim 1, wherein the decompressed image data is output to an output buffer configured to hold a complete set of decompressed image data.

13. The method of claim 1, wherein the buffer is configured to hold an A x C array of the decompressed image data, and wherein outputting the decompressed image data includes outputting an A x D array of the decompressed image data, wherein D is less than C.

14. The method of claim 13, further comprising reading in another A x D array of subsampled image data after outputting the A x D array of the decompressed image data.

15. The method of claim 13, wherein C is equal to three, and wherein D is equal to two.

16. A method of decompressing a set of subsampled image data, wherein the image data is arranged in an A x B array of pixels, the method comprising:

(a) reading a first subset of subsampled image data into a cache memory and into an decompression buffer configured to hold an A x C array of pixels of decompressed image data, wherein C is less than B;

(b) calculating chrominance values for at least some pixels of the subsampled image data to form the decompressed image data;

(c) outputting an A x D array of pixels of the decompressed image data to an output buffer, wherein D is less than or equal to C;

(d) reading another subset of the subsampled image data into the cache memory and into the decompression buffer, wherein the second subset of the subsampled image data has A x D pixels of image data; and

(e) repeating (b)-(d) until the set of subsampled image data is fully decompressed.

17. The method of claim 16, wherein the decompression buffer has an amount of memory equal to or less than the cache memory.

18. The method of claim 17, wherein the subsampled image data is 4:2:0 cosited image data.

19. The method of claim 18, wherein C is equal to three.

20. The method of claim 19, wherein the buffer has a first line, a second line and a third line, and wherein outputting an A x D array of pixels of the decompressed image data includes outputting decompressed image data from the first line and the second line.

21. The method of claim 20, further comprising resetting the third line as the first line before reading in another subset of the subsampled image data.

22. The method of claim 19, wherein D is equal to two.

23. An image processing device for decompressing subsampled image data, wherein the subsampled image data is arranged into an A x B array of pixels, the image processing device comprising:

buffer memory configured to receive a set of the subsampled image data for processing, wherein the buffer memory is configured to hold an A x C array of pixels of the image data, and wherein C is less than B;

cache memory configured to receive the set of subsampled image data and to hold the set of subsampled image data during processing, wherein the cache memory has sufficient size to store the A x C array of pixels of the image data; and

a processor configured to calculate chrominance values for the set of subsampled image data held in the buffer memory.

24. The image processing device of claim 23, wherein the buffer memory is smaller than the cache memory.

25. The image processing device of claim 23, wherein the buffer memory is configured to hold three lines of image data.

26. The image processing device of claim 23, wherein the subsampled image data is 4:2:0 cosited image data.

27. The image processing device of claim 26, wherein the buffer memory has a first line, a second line and a third line, and wherein the first line and the third line are configured to contain image data having sampled chrominance values.

28. The image processing device of claim 27, wherein the processor is configured to calculate missing chrominance values for the first line from sampled the chrominance values on the first line, missing chrominance values for the third line from sampled chrominance values on the third line, and missing chrominance values on the second line from the sampled chrominance values on the first and third lines.

29. The image processing device of claim 28, wherein the processor is configured to output the decompressed image data from the first and second lines to an output buffer after calculating the missing chrominance values for the first and second lines, and to then reset the third line as the first line.

30. The image processing device of claim 29, wherein the processor is configured to reset the first line as the second line and to reset the second line as the third line when resetting the third line as the first line.

31. The method of claim 30, further comprising reading in a new subset of subsampled image data into the second line and third line after resetting the first line as the second line and resetting the second line as the third line.

32. On a computer-readable storage medium, a program including a set of instructions executable by a computing device to process subsampled image data, wherein the subsampled image data is arranged in an A x B array of pixels, the set of instructions being executable by the computing device to:

read a first subset of the subsampled image data into a cache memory and into a buffer, wherein the buffer has an amount of memory equal to or less than the cache memory;

calculate chrominance values for at least some pixels of the subset of the subsampled image data to form decompressed image data; and

output the decompressed image data.

33. The program of claim 32, wherein the buffer is configured to hold an A x C array of pixels of the decompressed image data, wherein C is less than B.

34. The program of claim 33, wherein the buffer is configured to hold an A x 3 array of pixels of the decompressed image data.

35. The program of claim 32, wherein the subsampled image data is 4:2:0 cosited image data.

36. The program of claim 35, wherein the buffer has a first line, a second line and a third line, and wherein the first line and the third line contain sampled chrominance values of the subsampled image data.

37. The program of claim 36, wherein the instructions are executable to calculate chrominance values by calculating missing chrominance values for the first line from sampled chrominance values on the first line, calculating missing chrominance values for the third line from sampled chrominance values on the third line, and then calculating missing chrominance values on the second line from the sampled chrominance values on the first and third lines.

38. The program of claim 37, wherein the instructions are executable to output the decompressed image data from the first and second lines to an output buffer after calculating the missing chrominance values for the first and second lines, and to reset the third line as the first line.

39. The program of claim 38, wherein the instructions are executable to reset the first line as the second line and the second line as the third line when the third line is reset as the first line.

40. The program of claim 32, wherein the instructions are executable to read a second subset of the subsampled image data into the cache memory and into the buffer after outputting the decompressed image data.

41. The program of claim 40, wherein the instructions are configured to iteratively read subsets of the subsampled image data into the cache memory and into the buffer, calculate chrominance values for at least some pixels of each subset of the subsampled image data, and output the decompressed image data until the subsampled image data has been completely decompressed.

42. The program of claim 32, wherein the instructions are executable to output the decompressed image data to an output buffer configured to hold a complete set of decompressed image data.